

Fighting for Sex: Male Territoriality in a Lek-like Mating System of Reef Fishes

La lucha por Sexo: Masculino Territorialidad en un Sistema de Lek Lek-peces de Arrecife

Lutter pour Sexe: Masculin Territorialité dans un Système Mating Lek-lek de Poissons du Récif

TERRY J. DONALDSON

University of Guam Marine Laboratory, UOG Station, Mangilao, Guam 96923 USA.
tdonaldson@triton.uog.edu

EXTENDED ABSTRACT

Species of fishes in resident and transient spawning aggregations may utilize a lek-like mating system (Donaldson 1990). In this system, males secure and defend temporary territories for the purpose of attracting females. They defend these territories against rival males. Defense of these territories may favor male reproductive success if the defender holds a territory in a location that is attractive to females (Loiselle and Barlow 1978, Moyer and Yogo 1982, Donaldson 1990). The attractive qualities of the territory include a favorable place for spawning that protects the female's investment from predators while promoting effective dispersal of fertilized eggs.

Territorial defense comes with costs, however. These costs include energy expenditures in defending the territory against rival males who compete for access to females. Territorial behavior is costly also because of lost reproductive opportunities when males must engage rival males or potential egg predators. This system operates in a number of species of wrasses (Labridae). Many species are sexually dichromic (Thresher 1984, Myers 1999) in that there are larger and more colorful terminal phase males that arise from sex-changing females and hold temporary mating territories, and smaller initial phase males or primary males that often resemble females, do not hold territories, and engage in sneaking, streaking and even group spawning (Warner 2001).

Territorial defense by terminal phase males of four species of wrasses, *Cheilinus trilobatus*, *Epibulus insidiator*, *Gomphosus varius*, and *Hemigymnus melapterus*, that share a resident spawning aggregation site at Guam, Mariana Islands, yields similar patterns of success depending upon territory location but also similar costs to reproductive success.

For example, the Slingjaw Wrasse, *E. insidiator* typically had 10 males at Finger Reef, each with its own temporary mating territory. Males (B, C, and F in Figure 1) at the outer edge of the site had greater reproductive success compared to males below the edge (A, G, and I) or away from the edge (H, D, E, and J). *Cheilinus trilobatus*, *G. varius*, and *H. melapterus* males showed a similar pattern. More successful males spent considerable time and effort defending against rival males and egg predators, however, with defense against both often resulting in lost mating opportunities because of interrupted courtship.

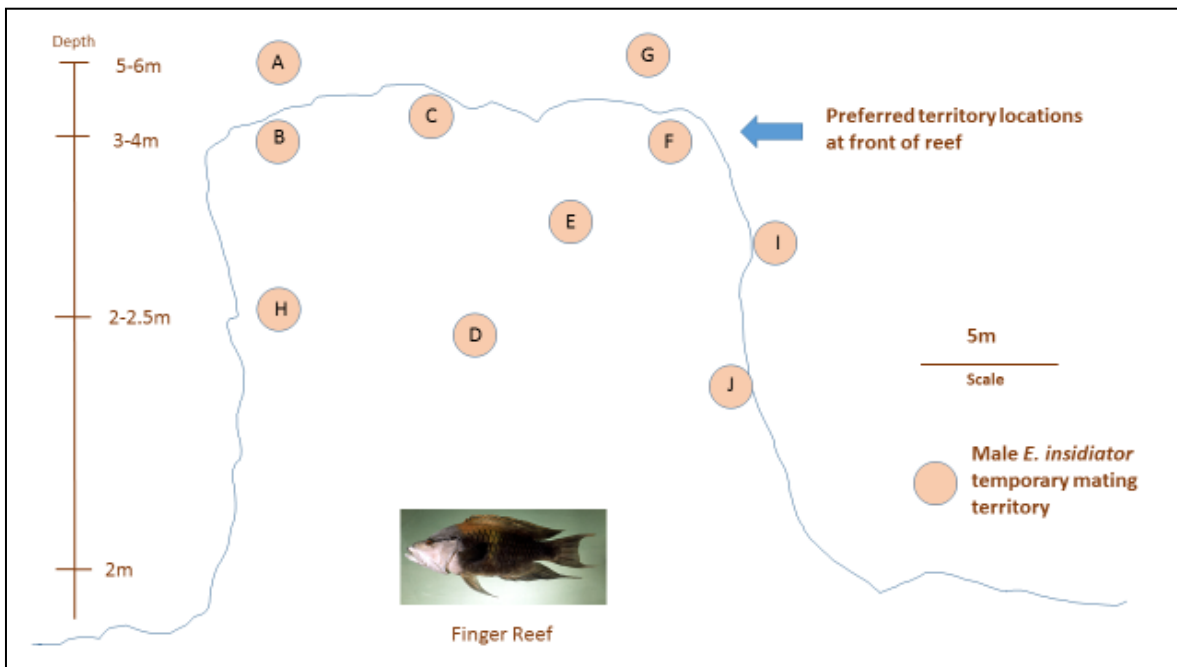


Figure 1. Distribution of male temporary lek-like mating territories of the wrasse *Epibulus insidiator* on a spawning aggregation site at Guam, Mariana Islands.

KEYWORDS: Mate competition, mating system, reproductive success, spawning aggregation, wrasses

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